

05/01/14    Agenda

Review Homework

- Worksheet 3 - Solve Quadratic Functions by Graphing
- Chapter 9 - Quadratic Functions & Equations
  - Day 4 - Solving Quadratic Functions with ZPP

Homework

- Worksheet 4 - Solve Quadratic Functions with ZPP

To solve quadratics, we use something called...

**Zero Product Property:** (also known as **ZPP**)

If  $a \cdot b = 0$  then, use the two steps for **ZPP**:

$$1. \ a = 0 \qquad 2. \ b = 0$$

$$\begin{pmatrix} \downarrow \\ =0 \end{pmatrix} \begin{pmatrix} \downarrow \\ =0 \end{pmatrix} = 0$$

Solve the following quadratics using ZPP:

$$(x+3)(x-2) = 0$$

$$\begin{array}{l|l} (x+3)=0 & (x-2)=0 \\ \hline x+3=0 & x-2=0 \\ -3 \ -3 & +2 \ +2 \\ \hline x=-3 & x=2 \end{array}$$

$$(x-6)(x+2) = 0$$

$$\begin{array}{l|l} x-6=0 & x+2=0 \\ \hline +6 \ +6 & -2 \ -2 \\ \hline x=6 & x=-2 \end{array}$$

$$(x-2)(3x+9) = 0$$

$$\begin{array}{l|l} x-2=0 & 3x+9=0 \\ \hline +2 \ +2 & -9 \ -9 \\ \hline x=2 & 3x=-9 \\ & \frac{3x}{3} = \frac{-9}{3} \\ & x=-3 \end{array}$$

$$(5x+10)(x-8) = 0$$

$$\begin{array}{l|l} 5x+10=0 & x-8=0 \\ \hline -10 \ -10 & +8 \ +8 \\ \hline 5x=-10 & x=8 \\ \hline \frac{5x}{5} = \frac{-10}{5} & \\ x=-2 & \end{array}$$

$$x^2 + 7x + 10 = 0$$

$$\begin{array}{l} \frac{ac}{5, 2} \frac{+7}{+7} \\ (x+5)(x+2) = 0 \\ \hline x+5=0 \quad x+2=0 \\ -5 \ -5 \quad -2 \ -2 \\ \hline x=-5 \quad x=-2 \end{array}$$

$$x^2 - 10x + 24 = 0$$

$$\begin{array}{l} \frac{1 \cdot 24}{-4, -6} \frac{-10}{-10} \\ (x-4)(x-6) = 0 \\ \hline x=4 \quad x=6 \end{array}$$

# Unit 9 - Day 4 - Solving Quadratic Functions with ZPP

May 1, 2014

Solve the following quadratics using ZPP:

$$x^2 + x - 42 = 0$$

$$\begin{array}{r} \text{ac } 1 \cdot -42 \\ = -42 \end{array} \quad \begin{array}{r} +1 \\ -6 \quad +7 \end{array}$$

$$(x-6)(x+7) = 0$$

$$\frac{4x^2}{4} - \frac{28x}{4} + \frac{48}{4} = 0$$

$$4(x^2 - 7x + 12) = 0$$

$$4(x-3)(x-4) = 0$$

$$\begin{array}{r|l} x-3=0 & x-4=0 \\ +3 & +4 \\ \hline x=3 & x=4 \end{array}$$

$$\frac{x^3}{x} + \frac{4x^2}{x} + \frac{3x^1}{x} = 0$$

$$1x(x^2 + 4x + 3) = 0$$

$$x(x+3)(x+1) = 0$$

$$\begin{array}{r|l} x+3=0 & x+1=0 \\ -3 & -1 \\ \hline x=-3 & x=-1 \end{array}$$

$$3x^3 - 21x^2 + 30x = 0$$

$$3x(x^2 - 7x + 10) = 0$$

## Unit 9 - Day 4 - Solving Quadratic Functions with ZPP

May 1, 2014

Lets try graphing one using the solutions and the vertex:

$$\frac{2x^2}{2} - \frac{8x}{2} - \frac{10}{2} = 0, \quad \frac{-5}{-5} \quad \frac{-4}{-4}$$

$$2(x^2 - 4x - 5) = 0$$

$$(x+1)(x-5) = 0$$

$$\begin{array}{r|l} x+1=0 & x-5=0 \\ \hline -1 & +5 \\ \hline x=-1 & x=5 \end{array}$$

